

1 We claim:

1 1. A data storage and retrieval system, comprising:

2 one or more hard disks individually disposed in one or more portable hard disk drive

3 units;

4 one or more moveable accessors;

5 one or more first servers, wherein each of said one or more first servers comprises a first

6 operating system;

7 a first information transfer station, wherein one or more of said one or more portable hard  
8 disk drive units can be releaseably coupled to said first information transfer station;

9 a first communication link interconnecting said one or more first servers and said first  
10 information transfer station;

11 one or more second servers, wherein each of said one or more second servers comprises a  
12 second operating system;

13 a second information transfer station, wherein one or more of said one or more portable  
14 hard disk drive units can be releaseably coupled to said second information transfer station; and

15 a second communication link interconnecting said one or more second servers and said  
16 second information transfer station.

1 2. The data storage and retrieval system of claim 1, wherein said first information  
2 transfer station comprises one or more information transfer slots.

1 3. The data storage and retrieval system of claim 2, wherein each of said one or  
2 more information transfer slots comprises a backplane, an information connector disposed on  
3 said backplane, and a power connector disposed on said backplane.

1           4.       The data storage and retrieval system of claim 1, wherein said second information  
2 transfer station comprises one or more information transfer slots.

1           5.       The data storage and retrieval system of claim 4, wherein each of said one or  
2 more information transfer slots comprises a backplane, an information connector disposed on  
3 said backplane, and a power connector disposed on said backplane.

1           6.       The data storage and retrieval system of claim 1, further comprising a first  
2 memory device interconnected with said first communication link.

1           7.       The data storage and retrieval system of claim 6, further comprising a second  
2 memory device interconnected with said second communication link.

1           8.       The data storage and retrieval system of claim 1, wherein said one or more first  
2 servers each comprise one or more information input devices and one or more information  
3 display devices.

1           9.       The data storage and retrieval system of claim 1, further comprising an accessor  
2 comprising a gripper mechanism, an information connector disposed on said gripper mechanism,  
3 and a memory device connected to said information connector, wherein said information  
4 connector can be releaseably coupled to said first information transfer station, and wherein said  
5 information connector can be releaseably coupled to said second information transfer station.

1           10.      A method to perform a disk operation using a data storage and retrieval system  
2 comprising one or more hard disks individually disposed in one or more portable hard disk drive  
3 units, a first information transfer station capable of communication with one or more first  
4 servers, and a second information transfer station capable of communication with one or more  
5 second servers, comprising the steps of:

6 receiving a request from said one or more first servers to perform a disk operation on a  
7 designated one of said one or more hard disks;  
8 releaseably coupling said designated hard disk to said second information transfer station;  
9 and  
10 performing said disk operation using said one or more second servers.

1 11. The method of claim 10, wherein said disk operation comprises formatting said  
2 designated hard disk.

1 12. The method of claim 10, wherein said disk operation comprises defragmenting  
2 said designated hard disk.

3 13. A method to store information using a data storage and retrieval system  
4 comprising one or more hard disks, one or more portable hard disk drive units individually  
5 housing one of said one or more hard disks, a first information transfer station capable of  
6 communication with one or more first servers, a second information transfer station capable of  
7 communication with one or more second servers, and a transfer hard disk housed in a portable  
8 hard disk drive unit, comprising the steps of:

9 receiving information from said one or more first servers;  
10 designating one or more of said one or more hard disks;  
11 releaseably coupling said transfer hard disk to said first information transfer station;  
12 writing said information on said transfer hard disk;  
13 releaseably coupling said transfer hard disk to said second information transfer station;  
14 copying said information on said one or more second servers;  
releaseably coupling to said second information transfer station said one or more  
designated hard disks; and

15 writing said information on said one or more designated hard disks.

1 14. The method of claim 13, further comprising the steps of:

2 erasing said information from said transfer hard disk; and

3 storing said transfer hard disk.

1 15. A method to retrieve information from a data storage and retrieval system

2 comprising one or more hard disks individually disposed in one or more portable hard disk drive

3 units, a first information transfer station capable of communication with one or more first

4 servers, and a second information transfer station capable of communication with one or more

5 second servers, comprising the steps of:

6 receiving from said one or more first servers a request to retrieve information stored on  
7 one or more of said one or more hard disks;

8 selecting one of said one or more hard disks;

9 releaseably coupling said selected hard disk to said second information transfer station;

10 determining if said information is stored on said selected hard disk;

11 operative if said information is stored on said selected hard disk, releaseably coupling

12 said selected hard disk to said first information transfer station; and

13 proving said information to said one or more first servers.

1 16. The method of claim 15, wherein said one or more first servers select said one of

2 said one or more hard disks.

1 17. The method of claim 15, wherein said data storage and retrieval system selects

2 said one of said one or more hard disks.

1 18. The method of claim 15, further comprising the steps of:

2 copying said information from said selected hard disk to said one or more second servers;

3 designating one or more of said one or more hard disks;

4 releaseably coupling said one or more designated hard disks to said second information

5 transfer station; and

6 copying said information on said one or more designated hard disks.

1 19. The method of claim 18, wherein said one or more first servers designates said  
2 one or more of said one or more hard disks.

1 20. The method of claim 18, wherein said data storage and retrieval system designates  
2 said one or more of said one or more hard disks.

1 21. A method to transfer information between servers using a data storage and  
2 retrieval system comprising one or more hard disks individually disposed in one or more portable  
3 hard disk drive units, a first information transfer station capable of communication with one or  
4 more first servers, a second information transfer station capable of communication with one or  
5 more second servers, and an accessor comprising a memory device and an information connector  
6 in communication with said memory device, comprising the steps of:

7 receiving a request from said one or more first servers to transfer information to said one  
8 or more second servers;

9 releaseably coupling said information connector to said first information transfer station;

10 storing said information in said memory device;

11 releaseably coupling said information connector to said second information transfer  
12 station; and

13 copying said information from said memory device to said one or more second servers.

1 22. A data storage and retrieval system comprising a computer useable medium  
2 having computer readable program code disposed therein for performing a disk operation,

3 wherein said data storage and retrieval system comprises one or more hard disks individually  
4 disposed in one or more portable hard disk drive units, a first information transfer station capable  
5 of communication with one or more first servers, and a second information transfer station  
6 capable of communication with one or more second servers, the computer readable program code  
7 comprising a series of computer readable program steps to effect:

8 receiving a request from said one or more first servers to perform a disk operation on a  
9 designated one of said one or more hard disks;

10 releaseably coupling said designated hard disk to said second information transfer station;

11 and

12 performing said disk operation using said one or more second servers.

23. The data storage and retrieval system of claim 22, wherein said disk operation  
comprises formatting said designated hard disk.

24. The data storage and retrieval system of claim 22, wherein said disk operation  
comprises defragmenting said designated hard disk.

25. A data storage and retrieval system comprising a computer useable medium  
2 having computer readable program code disposed therein for storing information on two or more  
3 hard disks, wherein said data storage and retrieval system comprises one or more hard disks  
4 individually disposed in one or more portable hard disk drive units, a first information transfer  
5 station capable of communication with one or more first servers, a second information transfer  
6 station capable of communication with one or more second servers, and a transfer hard disk  
7 disposed in a portable hard disk drive unit, the computer readable program code comprising a  
8 series of computer readable program steps to effect:

9 receiving information from said one or more first servers;

10 designating one or more of said one or more hard disks;  
11 releaseably coupling said transfer hard disk to said first information transfer station;  
12 writing said information on said transfer hard disk;  
13 releaseably coupling said transfer hard disk to said second information transfer station;  
14 copying said information on said one or more second servers;  
15 releaseably coupling to said second information transfer station said one or more  
16 designated hard disks; and  
17 writing said information on said one or more designated hard disks.

1 26. The data storage and retrieval system of claim 25, wherein the computer readable  
2 program code further comprises a series of computer readable program steps to effect:  
3 erasing said information from said transfer hard disk; and  
4 storing said transfer hard disk.

1 27. A data storage and retrieval system comprising a computer useable medium  
2 having computer readable program code disposed therein for retrieving information stored on  
3 one or more hard disks, wherein said data storage and retrieval system comprises one or more  
4 hard disks individually disposed in one or more portable hard disk drive units, a first information  
5 transfer station capable of communication with one or more first servers, and a second  
6 information transfer station capable of communication with one or more second servers, the  
7 computer readable program code comprising a series of computer readable program steps to  
8 effect:

9 receiving from said one or more first servers a request to retrieve designated information;  
10 selecting one of said one or more hard disks;  
11 releaseably coupling said selected hard disk to said second information transfer station;

12 determining if said designated information is stored on said selected hard disk;  
13 operative if said designated information is stored on said selected hard disk, releaseably  
14 coupling said selected hard disk to said first information transfer station; and  
15 providing said designated information to said one or more first servers.

1 28. The data storage and retrieval system of claim 27, wherein the computer readable  
2 program code further comprises a series of computer readable program steps to effect:

3 copying said designated information from said selected hard disk to said one or more  
4 second servers;

5 designating one or more of said one or more hard disks;

6 releaseably coupling said one or more designated hard disks to said second information  
7 transfer station; and

8 copying said designated information on said one or more designated hard disks.

9 29. A data storage and retrieval system comprising a computer useable medium  
10 having computer readable program code disposed therein for transferring information between  
11 servers, wherein said data storage and retrieval system comprises one or more hard disks  
individually disposed in one or more portable hard disk drive units, a first information transfer  
station capable of communication with one or more first servers, a second information transfer  
station capable of communication with one or more second servers, and an accessor comprising a  
memory device and an information connector in communication with said memory device, the  
computer readable program code comprising a series of computer readable program steps to  
effect:

receiving a request from said one or more first servers to transfer information to said one  
or more second servers;



12 releaseably coupling said information connector to said first information transfer station;  
13 storing said information in said memory device;  
14 releaseably coupling said information connector to said second information transfer  
15 station; and  
16 copying said information from said memory device to said one or more second servers.

1 30. A method to transfer information from a first data storage library to a second data  
2 storage library, wherein said first data storage library is capable of communication with one or  
3 more first servers and comprises one or more first portable data storage media and a first  
4 information transfer station capable of communication with one or more second servers, and  
5 wherein said second data storage library is capable of communication with said one or more first  
6 servers and comprises one or more second portable data storage media and a second information  
7 transfer station capable of communication with said one or more second servers, comprising the  
8 steps of:

9 receiving a request from said one or more first servers to transfer information stored on  
10 one or more designated first portable data storage media to one or more designated second  
11 portable data storage media;

12 releaseably coupling said one or more designated first portable data storage media to said  
13 first information transfer station;

14 copying said information by said one or more second servers;

15 releaseably coupling said one or more designated second portable data storage media to  
16 said second information transfer station; and

17 writing said information on said one or more designated second portable data storage  
18 media.

1           31.     The method of claim 30, wherein said first portable data storage media are  
2     selected from the group consisting of magnetic storage media, optical storage media, and  
3     electronic storage media.

1           32.     The method of claim 30, wherein said second portable data storage media are  
2     selected from the group consisting of magnetic storage media, optical storage media, and  
3     electronic storage media.

1           33.     A data storage and retrieval system comprising a computer useable medium  
2     having computer readable program code disposed therein for transferring information between a  
3     first data storage library and a second data storage library, wherein said first data storage library  
4     is capable of communication with one or more first servers and comprises one or more first  
5     portable data storage media and a first information transfer station capable of communication  
6     with one or more second servers, and wherein said second data storage library is capable of  
7     communication with said one or more first servers and comprises one or more second portable  
8     data storage media and a second information transfer station capable of communication with said  
9     one or more second servers, the computer readable program code comprising a series of  
10    computer readable program steps to effect:

11           receiving a request from said one or more first servers to transfer information stored on  
12    one or more designated first portable data storage media to one or more designated second  
13    portable data storage media;

14           releaseably coupling said one or more designated first portable data storage media to said  
15    first information transfer station;

16           copying said information by said one or more second servers;

17            releaseably coupling said one or more designated second portable data storage media to  
18    said second information transfer station; and  
19            writing said information on said one or more designated second portable data storage  
20    media.

1            34.    The data storage and retrieval system of claim 33, wherein said first portable data  
2    storage media are selected from the group consisting of magnetic storage media, optical storage  
3    media, and electronic storage media.

1            35.    The data storage and retrieval system of claim 33, wherein said second portable  
2    data storage media are selected from the group consisting of magnetic storage media, optical  
3    storage media, and electronic storage media.

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